

REMARKS

Claims 1-26 are all the claims pending in the application. Claims 14-26 have been withdrawn from consideration. Of the claims that have been examined on their merits, claims 1 and 9 are independent claims.

Applicants 1) have added the recitations of claim 2 to claim 1; 2) have rewritten claim 4 in independent form; 3) have rewritten claims 10 and 11 in independent form, and 3) have canceled claims 2 and 9.

As the claims now stand, claims 2-8 and 10-26 are all of the pending claims. Of the claims that have been examined on their merits, claims 2, 4, 10, and 11 are independent claims.

Elections/ Restrictions

The Examiner has withdrawn dependent claims 22-26 from consideration, alleging that claim 22 is independent and that these claims are directed to the group that was not elected in the election filed May 22, 2002. In fact, as is seen in line 5 of claim 22, the claim is not independent, but instead depends from originally filed claim 1.

As such, Applicants respectfully request that the Examiner examine these claims at least because they are not directed to non-elected subcombination Group II, but instead are properly considered as directed to a combination, in which the subcombination Group I (claim 1) is essential to the combination of claim 22. Therefore, restriction is inappropriate under these circumstances, as is discussed in MPEP §806.05(c).

In addition, Applicants submit that claims 22-26 are allowable at least 1) because of their dependency from claim 1 and also 2) because there is no teaching or suggestion in the cited art of

a sheet cutter having a device for estimating the lifetime of a movable blade that is movable over a fixed blade.

Claim Rejections 35 U.S.C. §§ 102 and 103

Claims 1, 6, and 7 are rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Wantanabe et al. (US 4,214,191). Claims 2-5 and 9-12 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Watanabe in view of Iwasaki (US 5,304,905). Claim 8 is rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Watanabe.

Watanabe and Iwasaki

The system in Watanabe determines a tool offset value caused by the wear of the cutting tool, while taking into account the mechanical deformation of the tool due to heat. When the tool offset value reaches a predetermined value, a different cutting tool is used.

Iwasaki describes a motor servo-system controller 3d that is used to control the trajectory of, for example, a machine tool or robot (col. 1, lines 35-37). The controller 3d has a position and speed detector 3, which detects the detected position value 12 and a detected speed value 13 (col. 1, lines 23-29). The detected position value 12 and a detected speed value 13 are input to the position control section 7 and speed control section 6, respectively (see Fig. 6). A current command value 18 is obtained based *inter alia* on a desired position command value 11 and these detected values (see, col. 1, lines 35-59 & Fig. 6).

The controller 3d also has a current detector 4 and a current control section 5. The current detector 4 detects a detected current value 15, and the current control section 5 compares

the detected current value 14 with the current command value 18 to obtain a current error 19.

The motor current 20 flowing through the motor 1 is determined based on the current error 19 (see, col. 1, lines 35-59 & Fig. 6).

Claim 1

With respect to amended claim 1 (originally presented claim 2), the Examiner acknowledges that Watanabe does not teach that the parameter detected is a value of current loaded in the motor. Therefore, the Examiner looks to the current detector of Iwasaki in an attempt to make up for this deficiency. There is, however, no teaching or suggestion of modifying the system for automatic management of tool life taught by Watanabe to dispense with the detector for measuring a tool offset value and instead use the current detector 4 of Iwasaki.

It is well settled that there must always be some motivation or suggestion to combine references in the teachings of the prior art or the knowledge of persons of ordinary skill in the art. *See, for example, In re Roffet*, 149 F.3d 1350, 1357 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).

The Examiner, however, merely asserts that the motivation for modifying Watanabe to use the current detector is to “provide an alternative method of detecting wear,” while providing no basis for this assertion. For example, Iwasaki does not discuss using the detected current value 18 as a parameter for detecting wear. This detected current value 18 is instead used to control the system by determining the motor current (col. 1, lines 57-58). Although the present application discusses using a current value of a motor in order to determine if a rotary blade 58

has worn out (page 11, 3rd full para.), any reliance by the Examiner on this teaching would be impermissible hindsight reasoning.

If the Examiner, however, is instead relying on a teaching of the prior art or the knowledge of persons of ordinary skill in the art at the time of the invention, Applicants request that the Examiner provide evidence of this motivation from the applied references, or alternatively evidence of a “specific understanding or technical principle within the knowledge of one of ordinary skill in the art [that] would have suggested the combination.” *In re Rouffet*; see also MPEP §2144 & §2144.03 (February 2003 Revision).

Claim 4

Applicants also respectfully submit that claim 4 is allowable at least because there is no motivation or suggestion of modifying the system for automatic management of tool life taught by Watanabe to dispense with the detector for measuring a tool offset value and instead use a detector for detecting a value of the “time that is required from beginning to completion of the cutting.”

Although Iwasaki teaches using a position and speed detector 3, there is no motivation or suggestion to use any time value that may have been detected in the process of detecting position and speed in order to “provide an alternative method of detecting wear,” as is alleged by the Examiner. As was discussed above with respect to claim 1, if any motivation other than hindsight exists to combine the references, Applicants request that the Examiner provide evidence of this motivation from the prior art or the knowledge of persons of ordinary skill in the art.

As such, Applicants respectfully request that the Examiner withdraw the rejection of claim 4 at least for the reasons discussed above.

Claims 10 and 11

Applicants also request that the Examiner withdraw the rejections of method claims 10 and 11, which are allowable at least because of the reasons discussed above with respect to similar apparatus claims 1 and 4, respectively, which include similar recitations.

Claims 3, 5, 6-8, and 12

Applicants also respectfully submit that claims 3 and 6-8 are allowable at least because of their dependency from claim 1, that claim 5 is allowable at least because of its dependency from claim 4, and that claim 12 is allowable at least because of its dependency from claim 10.

Conclusion

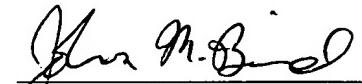
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.116
Appln. No. 09/909,988

Docket No. Q64671
Art Unit 3724

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 2 and 9 are canceled.

The claims are amended as follows:

Claim 1 (Amended): An apparatus of estimating a lifetime of a cutter for cutting a sheet comprising:

a detector for detecting a value of a parameter representing a cutting resistance during sheet cutting;

a comparator for comparing the detected value of the parameter with a predetermined reference value; ~~and~~

an output element for outputting a result based on the comparison; and

a motor for driving the cutter;

wherein the parameter is a value of a current loaded on the motor.

Claim 3 (Amended): The apparatus of claim 21, wherein the detector comprises an ammeter for measuring the value of the current.

Claim 4 (Amended): An apparatus of estimating a lifetime of a cutter for cutting a sheet comprising:

a detector for detecting a value of a parameter representing a cutting resistance during sheet cutting;

a comparator for comparing the detected value of the parameter with a predetermined reference value; and

an output element for outputting a result based on the comparison; The apparatus of claim 1,

wherein the parameter is a time that is required from beginning to completion of cutting.

Claim 10 (Amended): A method of estimating a lifetime of a cutter for cutting a sheet comprising the steps of:

(a) detecting a value of a parameter representing a cutting resistance during sheet cutting;

(b) comparing the detected value of the parameter with a predetermined reference value; and

(c) outputting a result based on the comparison ~~the method of claim 9,~~

wherein the parameter is a value of a current that is loaded onto a motor for driving the cutter.

Claim 11 (Amended): A method of estimating a lifetime of a cutter for cutting a sheet comprising the steps of:

(a) detecting a value of a parameter representing a cutting resistance during sheet cutting;

(b) comparing the detected value of the parameter with a predetermined reference value; and

(c) outputting a result based on the comparison ~~The method of claim 9,~~

wherein the parameter is a time that is required from beginning to completion of cutting.

Claim 12 (Amended): The method of claim 910, wherein it is determined that the cutter is unfit for use when the value of the parameter exceeds the predetermined reference value.